

What is claimed is:

1. A method to assay PARP activity, comprising
  - (a) contacting an immobilized PARP with NAD under conditions that allow PARP auto-ribosylation, wherein said NAD is biotinylated or avidin-conjugated;
    - (b) contacting the auto-ribosylated PARP with a detectable marker, wherein said detectable marker is avidin-conjugated in the case where the NAD of (a) is biotinylated, or wherein said detectable marker is biotinylated in the case where the NAD of (a) is avidin-conjugated, thereby forming a complex between the auto-ribosylated PARP and the detectable marker; and
      - (c) measuring the amount of detectable marker complexed to auto-ribosylated PARP, wherein the amount of detectable marker is indicative of the amount of PARP activity.
- 15 2. The method of claim 1, wherein said PARP is immobilized on a multiwell plate.
3. The method of claim 1, wherein said method is conducted at 4°C.
4. A method to assay PARP activity, comprising
  - (a) contacting an immobilized PARP with biotinylated NAD under conditions that allow PARP auto-ribosylation;
    - (b) contacting the auto-ribosylated PARP with an avidin-conjugated alkaline phosphatase, thereby forming a complex between the auto-ribosylated PARP and the avidin-conjugated alkaline phosphatase; and
      - (c) measuring the amount of alkaline phosphatase complexed to the auto-ribosylated PARP, wherein the amount is indicative of the amount of PARP activity.
- 20
- 25

5. A method to identify a modulator of PARP activity, comprising:
- (a) contacting an immobilized PARP with NAD in the presence of a test agent under conditions that allow PARP autoribosylation, wherein said NAD is biotinylated or avidin-conjugated;
- 5 (b) contacting the auto-ribosylated PARP with a detectable marker, wherein said detectable marker is avidin-conjugated in the case where the NAD of (a) is biotinylated, or wherein said detectable marker is biotinylated in the case where the NAD of (a) is avidin-conjugated, thereby forming a complex between the auto-ribosylated PARP and the detectable marker;
- 10 (c) measuring the amount of detectable marker complexed to the autoribosylated PARP; and
- (d) comparing the amount of detectable marker in step (c) to the amount of detectable marker in a control reaction executed without the test agent; wherein an altered amount of detectable marker in the presence of the test agent
- 15 relative to the amount of detectable marker in the control reaction indicates that the test agent is a modulator of PARP.

6. The method of claim 5, wherein said PARP is immobilized on a multiwell plate.

20 7. The method of claim 5, wherein said method is conducted at 4°C.

8. A method to identify a modulator of PARP activity, comprising:
- (a) contacting an immobilized PARP with biotinylated NAD in the presence of a test agent under conditions that allow PARP auto-ribosylation;
- 25 (b) contacting the auto-ribosylated PARP with an avidin-conjugated alkaline phosphatase, thereby forming a complex between the auto-ribosylated PARP and the avidin-conjugated alkaline phosphatase;
- (c) measuring the amount of alkaline phosphatase complexed to the autoribosylated PARP; and

(d) comparing the amount of alkaline phosphatase in step (c) to the amount of alkaline phosphatase in a control reaction executed without the test agent;

wherein an altered amount of alkaline phosphatase in the presence of the test agent relative to the amount of alkaline phosphatase in the control reaction indicates that the  
5 test agent is a modulator of PARP.

9. A kit comprising:

(a) PARP immobilized on a solid support;

(b) biotinylated NAD or avidin-conjugated NAD; and

10 (c) an avidin-conjugated detectable marker in the case where the NAD of (b) is biotinylated, or a biotinylated detectable marker in the case where the NAD of (b) is avidin-conjugated.

10. The kit of claim 9, wherein said solid support is a multiwell plate.

15

11. A kit comprising:

(a) PARP immobilized on a solid support;

(b) biotinylated NAD; and

(c) avidin-conjugated alkaline phosphatase.

20